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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/713,342	11/14/2000	Youssef Drissi	YOR920000401US1	3627

48062 7590 10/22/2007

RYAN, MASON & LEWIS, LLP
1300 POST ROAD
SUITE 205
FAIRFIELD, CT 06824

EXAMINER	
STARKS, WILBERT L	
ART UNIT	**PAPER NUMBER**
2129	
MAIL DATE	**DELIVERY MODE**
10/22/2007	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/713,342
Filing Date: November 14, 2000
Appellant(s): DRISSI ET AL.

Kevin M. Mason,
Reg. No. 36,597

For Appellant

EXAMINER'S ANSWER

This is in response to the Corrected Summary of Claimed Subject Matter filed 04 JUN 2007 in response to the Notification of Non-Compliant Appeal Brief mailed 04 MAY 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

McAulay, A.D., et al., Improved Learning in Genetic Rule-Based Classifier Systems, Systems, Man and Cybernetics, 1991; Decision Aiding for Complex Systems, Conference Proceedings, 1991 IEEE International Conference, October 13-16, 1991, Pages 1393-1398, Vol. 2.

Lewis, D. D., An Evaluation of Phrasal and Clustered Representations on a Text Categorization Task, Proceeding of the Fifteenth Annual International ACM SIGR Conference on Research and Development in Information Retrieval, June 1992, pages 37-50.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 U.S.C. § 101

35 U.S.C. §101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. The invention as disclosed in claims 1-23 is directed to non-statutory subject matter.

2. None of the claims in the case is limited to practical applications of the claimed algorithm. Examiner finds that *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) controls the 35 U.S.C. §101 issues on that point for reasons made clear by the Federal Circuit in *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447 (Fed. Cir. 1999). Specifically, the Federal Circuit held that the act of:

> "taking several abstract ideas and manipulating them together adds nothing to the basic equation." *AT&T v. Excel* at 1453 quoting *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir. 1994).

Examiner finds that Applicant's classified "data" are just such abstract ideas.

3. Examiner bases his position upon guidance provided by the Federal Circuit in *In re Warmerdam*, as interpreted by *AT&T v. Excel*. This set of precedents is within the same line of cases as the *Alappat-State Street Bank* decisions and is in complete agreement with those decisions. *Warmerdam* is consistent with *State Street*'s holding that:

> "Today we hold that *the transformation of data, representing* ***discrete dollar amounts****, by a machine through a series of mathematical calculations into a final share price*, constitutes a practical application of a mathematical algorithm, formula, or calculation because it produces 'a useful, concrete and tangible result" -- *a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.*" (emphasis added) *State Street Bank* at 1601.

4. True enough, that case later eliminated the "business method exception" in order to show that business methods were not per se nonstatutory, but the court clearly *did not* go so far as to make business methods *per se statutory*. A plain reading of the excerpt above shows that the Court was *very specific* in its definition of the new *practical application*. It would have been much easier for the court to say that "business methods were per se statutory" than it was to define the practical application in the case as "...the transformation of data, **representing discrete dollar amounts**, by a machine through a series of mathematical calculations into a final share price..."

5. The court was being very specific.

6. Additionally, the court was also careful to specify that the useful, concrete and tangible result" it found was "a final share price momentarily fixed for recording purposes and even accepted and **relied upon by regulatory authorities and in subsequent trades**."

7. Applicant cites no such specific results to define a useful, concrete and tangible result. Neither does Applicant specify the associated practical application with the kind of specificity the Federal Circuit used.

8. Furthermore, in the case *In re Warmerdam*, the Federal Circuit held that:

> "**the dispositive issue** for assessing compliance with Section 101 in this case is whether the claim is for a process that goes beyond **simply manipulating 'abstract ideas' or 'natural phenomena'** ... As the Supreme Court has made clear, '[a]n idea of itself is not patentable, ... *taking several abstract ideas and manipulating them together adds nothing to the basic equation.*" In re Warmerdam 31 USPQ2d at 1759 (emphasis added).

9. In the present case, the Examiner finds that Applicant manipulated a set of abstract "input data" to solve mathematical problems in the **abstract**. Under *Warmerdam*, the result of such manipulations is not statutory.

10. Since *Warmerdam* is within the *Alappat-State Street Bank* line of cases, it takes the same view of "useful, concrete, and tangible" the Federal Circuit applied in *State Street Bank*. Therefore, under *State Street Bank*, this could not be a "useful, concrete and tangible result". There is only manipulation of abstract ideas.

11. The Federal Circuit validated the use of *Warmerdam* in its more recent *AT&T Corp. v. Excel Communications, Inc.* decision. The court noted that:

> "Finally, the decision in *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) is not to the contrary. *** The court found that the claimed process did nothing more than **manipulate basic mathematical constructs** and concluded that '*taking several abstract ideas and manipulating them together adds nothing to the basic equation*'; *hence,* the court held that the claims were properly rejected under §101 ... Whether one agrees with the court's conclusion on the facts, the holding of the case is a straightforward application of the basic principle that mere laws of nature, natural phenomena, and abstract ideas are not within the categories of inventions or discoveries that may be patented under §101."(emphasis added) *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447, 1453 (Fed. Cir. 1999).

12. The fact that the invention is merely the manipulation of *abstract ideas* is indisputable. The object referred to by Applicant's abstract word "data" is simply a mathematical/logical construct in the abstract.

13. Examiner searched for statutory material from every known perspective (i.e., under *Diamond v. Diehr, Cochrane v. Deener, AT&T, State Street* and *Warmerdam, etc.)* and finds no statutory material at all. The claims are devoid of statutory material.

14. Consequently, the necessary conclusion under *Diamond v. Diehr, Cochrane v. Deener, AT&T, State Street* and *Warmerdam,* is straightforward and clear. The claims take several abstract ideas (i.e., a range of data points in the abstract) and manipulate them together adding nothing to the basic equation. Claims 1-6 are rejected under 35 U.S.C. §101.

15. Regarding the "system" and "computer readable medium" recitals in claims 16-22 and 23, the invention is still found to be nonstatutory. Any other finding would be at variance with current case law. Specifically, the Federal Circuit held in *AT&T v. Excel*, 50 USPQ2d 1447 (Fed. Cir. 1999) held that:

> "Whether stated implicitly or explicitly, we consider the scope of Section 101 to be **the same regardless of the form** -- machine or process -- in which a particular claim is drafted." *AT&T v. Excel*, 50 USPQ2d 1447, 1452 citing *In re Alappat*, 33 F.3d at 1581, 31 USPQ2d at 1589 (Rader, J., concurring)

16. Examiner considers the scope of Section 101 to be the same regardless of whether Applicant *claims* a "process," "machine," or "product of manufacture". While claims 22 and 23 are drawn to "products of manufacture", they are insufficient by themselves to limit the claims to statutory subject matter. Examiner's position is clearly consistent with *Alappat,* and *AT&T* and is implicitly consistent with *Warmerdam* and *State Street*. Accordingly, those claims are properly rejected.

Claim Rejections - 35 U.S.C. § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

18. Claims 1- 4, 8-9, 13-19, and 21-23 are rejected under 35 U.S.C. §102(b) as being anticipated by McAulay, A.D.; Oh, J.C.; *Improved learning in genetic rule-based classifier systems*, Systems, Man, and Cybernetics, 1991. 'Decision Aiding for Complex Systems, Conference Proceedings., 1991 IEEE International Conference on, 13-16 Oct. 1991, Page(s): 1393 -1398 vol. 2.

Claim 1

19. Claim 1's "classifying objects in a domain dataset using a data classification model, said data classification model having a bias;" is anticipated by McAulay, A.D., Figure 1, lines 2-3. Specifically, the "structures" in line 3 of the above reference are the genetic structures of the classifiers that are being evolved (See, McAulay, A.D., page

1394, second column, second full paragraph under section "B" Titled: "Classifier Systems.")

20. Claim 1's "evaluating the performance of said classifying step; and" is anticipated by McAulay, A.D., Figure 1, lines 4-5. See also, McAulay, A.D., page 1394, second column, second full paragraph under section "B" Titled: "Classifier Systems."

21. Claim 1's "modifying said bias based on said performance evaluation." is anticipated by McAulay, A.D., Figure 1, lines 10-11. McAulay, A.D., page 1396, second column, first full paragraph under section "C" Titled: "Fine Tuned Search For Useful Rules -- Specializing." The next to last sentence discuses placing the hyperplanes of the classifiers (i.e., classification threshold, or "bias," as claimed by Applicant.)

Claim 2

22. Claim 2's "The method of claim 1, wherein said steps of classifying and evaluating are performed for a plurality of said domain datasets and wherein said method further comprising the steps of recording a performance value for each combination of said domain datasets and said bias." is anticipated by McAulay, A.D., Figure 1, lines 4-5. See also, McAulay, A.D., page 1394, second column, second full paragraph under section "B" Titled: "Classifier Systems."

Claim 3

23. Claim 3's "The method of claim 2, further comprising the step of processing said

recorded performance values for each combination of said domain datasets and said bias to generate one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models." is anticipated by McAulay, A.D., Figure 1, lines 4-5.

Claim 4

24. Claim 4's "The method of claim 3, further comprising the step of selecting a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules." is anticipated by McAulay, A.D., p. 1393, third paragraph, first three lines of the paragraph.

Claim 8

25. Claim 8's "classifying objects in a plurality of domain datasets using one of a number of data classification models, each of said data classification models having a corresponding bias;" is anticipated by McAulay, A.D., Figure 1, lines 2-3. Specifically, the "structures" in line 3 of the above reference are the genetic structures of the classifiers that are being evolved (See, McAulay, A.D., page 1394, second column, second full paragraph under section "B" Titled: "Classifier Systems.")

26. Claim 8's "evaluating the performance of each of said domain dataset classifications;" is anticipated by McAulay, A.D., Figure 1, lines 4-5. See also, McAulay,

A.D., page 1394, second column, second full paragraph under section "B" Titled: "Classifier Systems."

27. Claim 8's "maintaining a performance value for each combination of said domain datasets and said bias;" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

28. Claim 8's "processing said performance values for each combination of said domain datasets and said bias to generate one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models; and" is anticipated by McAulay, A.D., Figure 1, lines 10-11.

29. Claim 8's "selecting a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules." is anticipated by McAulay, A.D., Figure 1, lines 10-11. McAulay, A.D., page 1396, second column, first full paragraph under section "C" Titled: "Fine Tuned Search For Useful Rules -- Specializing." The next to last sentence discuses placing the hyperplanes of the classifiers (i.e., classification threshold, or "bias," as claimed by Applicant.)

Claim 9

30. Claim 9's "The method of claim 8, further comprising the step of modifying at least one of said biases based on said performance evaluation." is anticipated by McAulay, A.D., Figure 1, lines 10-11. McAulay, A.D., page 1396, second column, first full paragraph under section "C" Titled: "Fine Tuned Search For Useful Rules --

Specializing." The next to last sentence discuses placing the hyperplanes of the classifiers (i.e., classification threshold, or "bias," as claimed by Applicant.)

Claim 13

31. Claim 13's "applying an adaptive learning algorithm to said domain dataset to select a data classification model, said data classification model having a bias;" is anticipated by McAulay, A.D., Figure 1, lines 2-3. Specifically, the "structures" in line 3 of the above reference are the genetic structures of the classifiers that are being evolved (See, McAulay, A.D., page 1394, second column, second full paragraph under section "B" Titled: "Classifier Systems.")

32. Claim 13's "classifying objects in said domain dataset using said selected data classification model;" is anticipated by McAulay, A.D., p. 1393, third paragraph, first three lines of the paragraph.

33. Claim 13's "evaluating the performance of said classifying step;" is anticipated by McAulay, A.D., Figure 1, lines 4-5. See also, McAulay, A.D., page 1394, second column, second full paragraph under section "B" Titled: "Classifier Systems."

34. Claim 13's "maintaining an indication of said performance of said model for said domain dataset; repeating said applying, classifying and evaluating steps for a plurality of said domain datasets; and" is anticipated by McAulay, A.D., Figure 1, lines 4-5. See also, McAulay, A.D., page 1394, second column, second full paragraph under section "B" Titled: "Classifier Systems."

35. Claim 13's "processing said performance values for each combination of said domain datasets and said bias to adjust one or more rules for subsequent data classification, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models." is anticipated by McAulay, A.D., Figure 1, lines 10-11.

Claim 14

36. Claim 14's "The method of claim 13, further comprising the step of selecting a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules." is anticipated by McAulay, A.D., p. 1393, third paragraph, first three lines of the paragraph.

Claim 15

37. Claim 15's "The method of claim 13, further comprising the step of modifying at least one of said biases based on said performance evaluation." is anticipated by McAulay, A.D., Figure 1, lines 10-11. McAulay, A.D., page 1396, second column, first full paragraph under section "C" Titled: "Fine Tuned Search For Useful Rules -- Specializing." The next to last sentence discuses placing the hyperplanes of the classifiers (i.e., classification threshold, or "bias," as claimed by Applicant.)

Claim 16

38. Claim 16's "a memory that stores computer-readable code; and" is anticipated by McAulay, A.D., Figure 1.

39. Claim 16's "a processor operatively coupled to said memory, said processor configured to implement said computer-readable code, said computer-readable code configured to:" is anticipated by McAulay, A.D., Figure 1.

40. Claim 16's "classify objects in a domain dataset using a data classification model, said data classification model having a bias;" is anticipated by McAulay, A.D., Figure 1, lines 10-11.

41. Claim 16's "evaluate the performance of said classifying step; and" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

42. Claim 16's "modify said bias based on said performance evaluation." is anticipated by McAulay, A.D., Figure 1, lines 10-11.

Claim 17

43. Claim 17's "The system of claim 16, wherein said processor is further configured to classify said objects and evaluate said performance for a plurality of said domain datasets and wherein said processor records a performance value for each combination of said domain datasets and said bias." is anticipated by McAulay, A.D., Figure 1, lines 4-5.

Claim 18

44. Claim 18's "The system of claim 17, wherein said processor is further configured to process said recorded performance values for each combination of said domain datasets and said bias to generate one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models." is anticipated by McAulay, A.D., Figure 1, lines 10-11.

Claim 19

45. Claim 19's "The system of claim 18, wherein said processor is further configured to select a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules." is anticipated by McAulay, A.D., Figure 1, lines 4-5.

Claim 21

46. Claim 21's "a memory that stores computer-readable code; and" is anticipated by McAulay, A.D., Figure 1, lines 10-11.

47. Claim 21's "a processor operatively coupled to said memory, said processor configured to implement said computer readable code, said computer-readable code configured to:" is anticipated by McAulay, A.D., Figure 1.

48. Claim 21's "classify objects in a plurality of domain datasets using one of a number of data classification models, each of said data classification models having a corresponding bias;" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

49. Claim 21's "evaluate the performance of each of said domain dataset classifications;" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

50. Claim 21's "maintaining a performance value for each combination of said domain datasets and said bias;" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

51. Claim 21's "process said performance values for each combination of said domain datasets and said bias to generate one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models; and" is anticipated by McAulay, A.D., Figure 1, lines 10-11.

52. Claim 21's "select a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules." is anticipated by McAulay, A.D., Figure 1, lines 4-5.

Claim 22

53. Claim 22's "a step to classify objects in a domain dataset using a data classification model, said data classification model having a bias;" is anticipated by McAulay, A.D., Figure 1, lines 2-3. Specifically, the "structures" in line 3 of the above reference are the genetic structures of the classifiers that are being evolved (See,

McAulay, A.D., page 1394, second column, second full paragraph under section "B" Titled: "Classifier Systems.")

54. Claim 22's "a step to evaluate the performance of said classifying step; and" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

55. Claim 22's "a step to modify said bias based on said performance valuation." is anticipated by McAulay, A.D., Figure 1, lines 10-11.

Claim 23

56. Claim 23's "a step to classify objects in a plurality of domain datasets using one of a number of data classification models, each of said data classification models having a corresponding bias;" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

57. Claim 23's "a step to evaluate the performance of each of said domain dataset classifications;" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

58. Claim 23's "a step to maintaining a performance value for each combination of said domain datasets and said bias;" is anticipated by McAulay, A.D., Figure 1, lines 4-5.

59. Claim 23's "a step to process said performance values for each combination of said domain datasets and said bias to generate one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models; and" is anticipated by McAulay, A.D., Figure 1, lines 10-11.

60. Claim 23's "a step to select a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules." is anticipated by McAulay, A.D., Figure 1, lines 4-5.

Claim Rejections - 35 U.S.C. § 103

61. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

62. Claims 5-7, 10-12, and 20 are rejected under 35 U.S.C. §103(a) as being unpatentable over McAulay, A.D. et al in view of Lewis, David D., *An Evaluation of Phrasal and Clustered Representations on a Text Categorization Task*, Proceedings of the 15th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval, June 1992, pp. 37-50.

Claim 5

63. McAulay, A.D. et al shows the use of a genetic rule-based classifier but does not disclose claim 5's "The method of claim 1, wherein said domain dataset is represented using a set of meta-features." Lewis, David D., however does show a classifier using "meta-features".

64. *Motivation* – The claimed meta-features would have been a highly desirable feature in the art due to its ability to improve text retrieval effectiveness and Lewis,

David D. recognizes that the text retrieval effectiveness would be improved if the meta-features of Lewis David D. were substituted for the standard feature sets of McAulay, Alastair, D. Therefore, it would have been obvious to one of ordinary skill in the art to combine Lewis with McAulay to obtain the invention as specified in claim 5.

Claim 6

65. McAulay, A.D. et al shows the use of a genetic rule-based classifier but does not disclose claim 6's "The method of claim 5, wherein said meta-features includes a concept variation meta-feature." Lewis, David D., however does show a classifier using "meta-features".

66. *Motivation* – The claimed meta-features would have been a highly desirable feature in the art due to its ability to improve text retrieval effectiveness and Lewis, David D. recognizes that the text retrieval effectiveness would be improved if the meta-features of Lewis David D. were substituted for the standard feature sets of McAulay, Alastair, D. Therefore, it would have been obvious to one of ordinary skill in the art to combine Lewis with McAulay to obtain the invention as specified in claim 6.

Claim 7

67. McAulay, A.D. et al shows the use of a genetic rule-based classifier but does not disclose claim 7's "The method of claim 5, wherein said meta-features includes an average weighted distance meta-feature that measures the density of the distribution of

said at least one domain dataset." Lewis, David D., however does show a classifier using "meta-features".

68. *Motivation* – The claimed meta-features would have been a highly desirable feature in the art due to its ability to improve text retrieval effectiveness and Lewis, David D. recognizes that the text retrieval effectiveness would be improved if the meta-features of Lewis David D. were substituted for the standard feature sets of McAulay, Alastair, D. Therefore, it would have been obvious to one of ordinary skill in the art to combine Lewis with McAulay to obtain the invention as specified in claim 7.

Claim 10

69. McAulay, A.D. et al shows the use of a genetic rule-based classifier but does not disclose claim 10's "The method of claim 8, wherein said domain dataset is represented using a set of meta-features." Lewis, David D., however does show a classifier using "meta-features".

70. *Motivation* – The claimed meta-features would have been a highly desirable feature in the art due to its ability to improve text retrieval effectiveness and Lewis, David D. recognizes that the text retrieval effectiveness would be improved if the meta-features of Lewis David D. were substituted for the standard feature sets of McAulay, Alastair, D. Therefore, it would have been obvious to one of ordinary skill in the art to combine Lewis with McAulay to obtain the invention as specified in claim 10.

Claim 11

71. McAulay, A.D. et al shows the use of a genetic rule-based classifier but does not disclose claim 11's "The method of claim 10, wherein said meta-features includes a concept variation meta-feature." Lewis, David D., however does show a classifier using "meta-features".

72. *Motivation* – The claimed meta-features would have been a highly desirable feature in the art due to its ability to improve text retrieval effectiveness and Lewis, David D. recognizes that the text retrieval effectiveness would be improved if the meta-features of Lewis David D. were substituted for the standard feature sets of McAulay, Alastair, D. Therefore, it would have been obvious to one of ordinary skill in the art to combine Lewis with McAulay to obtain the invention as specified in claim 11.

Claim 12

73. McAulay, A.D. et al shows the use of a genetic rule-based classifier but does not disclose claim 12's "The method of claim 10, wherein said meta-features includes an average weighted distance meta-feature that measures the density of the distribution of said at least one domain dataset." Lewis, David D., however does show a classifier using "meta-features".

74. *Motivation* – The claimed meta-features would have been a highly desirable feature in the art due to its ability to improve text retrieval effectiveness and Lewis, David D. recognizes that the text retrieval effectiveness would be improved if the meta-features of Lewis David D. were substituted for the standard feature sets of McAulay,

Alastair, D. Therefore, it would have been obvious to one of ordinary skill in the art to combine Lewis with McAulay to obtain the invention as specified in claim 12.

Claim 20

75. McAulay, A.D. et al shows the use of a genetic rule-based classifier but does not disclose claim 20's "The system of claim 16, wherein said domain dataset is represented using a set of meta-features." Lewis, David D., however does show a classifier using "meta-features".

76. *Motivation* – The claimed meta-features would have been a highly desirable feature in the art due to its ability to improve text retrieval effectiveness and Lewis, David D. recognizes that the text retrieval effectiveness would be improved if the meta-features of Lewis David D. were substituted for the standard feature sets of McAulay, Alastair, D. Therefore, it would have been obvious to one of ordinary skill in the art to combine Lewis with McAulay to obtain the invention as specified in claim 20.

(10) Response to Argument

101 Arguments

Applicant's Argument 1

> Claims 1-23 were rejected as being directed to non-statutory subject matter. In particular, the Examiner asserts that claims 1, 8, 13, 16, and 21-23 are not claimed to be practiced on a computer and that it is clear that these claims are not limited to practice in the technological arts. The Examiner further asserts that none of the claims are limited to

> practical applications in the technological arts, that Applicants fail to define a useful, concrete and tangible result, and do not specify the associated practical application with the appropriate level of specificity. The Examiner also finds that the Applicants manipulated a set of abstract "input data" to solve mathematical problems in the abstract and that the result of such manipulations is not statutory. Regarding the "system" and "computer readable medium" recitals in claims 16-23, the Examiner asserts that the invention is still found to be non-statutory.
>
> Under Section 101, "any new and useful process, machine, manufacture, or composition of matter" is patentable. 35 U.S.C. §101. It is recognized, however, that despite the broad scope of section 101, "laws of nature, physical phenomena and abstract ideas" cannot be patented. Diamond v. Chakrabarty, 44.7 U.S. 303, 309, 206 U.S.P.Q.(BNA) 193, 197 (1980).

Examiner withdraws any argument based on whether the claims are in the "technological arts". The rejections of the claims, however are not withdrawn because there is ample precedent in case law to reject the claims.

Applicant quotes Diamond v. Chakrabarty, but does not show how it applies to the instant case. Applicant's argument is conclusory and does not apply the law to the facts.

Examiner looks for statutory material from every perspective possible: 1) From the State Street Bank Perspective, 2) from the In re Warmerdam/AT&T perspective, 3) from the Diamond v. Diehr/Cochrane v. Deener/Gottschalk/Chakrabarty perspective, 4) from the Arrhythmia perspective, and 5) the rest of the cases in §101 doctrine. Examiner finds no basis under any of these cases to find that the claims are statutory. Applicant was given numerous times to present statutory matter and his best argument is that the transformation of pure "data" via an algorithm is statutory. Examiner disagrees with Applicant's position and maintains the rejections.

Applicant's Argument 2

> The Examiner asserts that claims 1-23 are not claimed to be practiced on a computer and that it is clear that these claims are not limited to practice in the technological arts. To the contrary, however, each of the independent claims are expressly directed to a practical method of (or system for) "classifying data." For example, the method can be used to classify real numerical vectors. Thus, each of these claims are clearly tied to a practical application. A process that is limited to a practical application of an abstract idea or mathematical algorithm in the technological arts is patentable. See Examination Guidelines for Computer-Related Inventions, Section IV. B. 2. b. (ii).

Applicant asserts that "...each of the independent claims are expressly directed to a practical method of (or system for) 'classifying data.'"

Clearly, the "data" Applicant discusses, in its broadest reasonable interpretation, includes purely mathematical data. That interpretation makes it so that the claims have an interpretation where they are devoid of statutory matter.

Another way of looking at it is this: The word "data" includes all types of data...including mathematical data to be processed in a purely mathematical algorithm. This means that Applicant's word "data" is even more abstract than the word "mathematical data." The word "data" is unlimited in practical application where "mathematical data" is actually limited to purely mathematical data. Well, if pure mathematical algorithms are per se nonstatutory (and they are even more limiting than the "data" claimed by Applicant) how can mere "data" be statutory when it is even less limiting than pure mathematical algorithms? Applicant claims an abstract idea. Under In re Warmerdam, Applicant

merely manipulates abstract ideas and adds nothing to the basic equation. Applicant claims no limitation to any practical application in the real world.

Applicant's Argument 3

In the Office Action dated May 19, 2005, the Examiner asserts that Applicants have admitted that the invention is an algorithm operating on purely unspecified variables, and have admitted the very elements that trigger the application of the Warmerdam standard (i.e., the pure algorithmic manipulation of abstractions).
Appellants note that, in the text cited by the Examiner, it was simply stated that the method(s) of the present invention can be used to classify real numerical vectors and, thus, each of the claims are clearly tied to a practical application.

Appellants also acknowledge the fact that, in general, a process that is limited to a practical application of an abstract idea or mathematical algorithm in the technological arts is patentable. Appellants, however, could not find any of the admissions as cited by the Examiner.
In any event, the analysis does not stop there. The Supreme Court has stated that the "[t]ransformation and reduction of an article 'to a different state or thing' is the clue to patentability of a process claim." Gottshalk v. Benson, 409 U.S. 63, 70, 175 U.S.P.Q. (BNA) 676 (1972). In other words, claims that require some kind of transformation of subject matter, which has been held to include intangible subject matter, such as data or signals that are representative of or constitute physical activity or objects, have been held to comply with Section 101. See, for example, In re Warmerdam, 31 U.S.P.Q.2d (BNA) 1754, 1759 n.5 (Fed. Cir. 1994) or In re Schrader, 22 F.3d 290, 295, 30 U.S.P.Q.2d (BNA) 1455, 1459 n.12 (Fed. Cir. 1994).

Each independent claim includes at 1 east one transformation. For example, independent claims 1, 16 and 22 modify the bias of one or more data classification models, based on a performance evaluation. Thus, a modified data classification model is provided. Claims 8, 21 and 23 classify objects and select a data

classification model for classifying a domain dataset by comparing characteristics of the domain dataset to rules. Thus, an object classification is provided. Finally, claim 13 processes performance values for each combination of domain dataset and said bias to adjust one or more rules for subsequent data classification. Thus, adjusted rules are provided.

Regarding Applicant's admission, a similar admission is made above when he asserts that the algorithmic manipulation of pure "data" is statutory in "Argument 2". Pure "data" are less limiting than "mathematical data", which are per se abstract and nonstatutory. Applicant admits he rests his argument on the algorithmic manipulation of these abstract ideas that are more abstract than pure mathematical data.

Regarding Applicant's assertion that modifying "the bias of one or more data classification models, based on a performance evaluation" is some sort of transformation in the real world...Examiner disagrees.

Applicant did not identify what things he was evaluating the performance of. In the broadest reasonable interpretation of the claim, the evaluated thing could be a subroutine...a computer program per se. a computer program evaluating a computer program is not statutory. There must be limitations to real world applications.

Applicant's Argument 4

> In the Office Action dated May 19, 2005, the Examiner asserts that there are no limitations in the claims to show that they are drawn to include the transformation of data or signals that are representative of or constitute physical activity or objects.
>
> Contrary to the Examiner's assertion, the modified data classification model, object classification, and adjusted rules, cited above are the result of the transformation of subject matter, which has been held to include intangible subject matter, such as data or signals that are representative of or constitute physical activity or objects.
>
> Appellants submit that each of the claims 1-23 are therefore in full compliance with 35 U.S.C. §101, and accordingly, respectfully request that the rejection under 35 U.S.C. §101 be withdrawn.

Applicant's argument that the transformation of pure "data" is statutory because it can be applied to many different practical applications is insufficient to actually limit his claims to such applications. The allusion to such matter are only subsets of the actual matter limited by the claims. In their broadest reasonable interpretation, the claims include computer programs per se (i.e., purely algorithmic "objects" communicating with each other.) An argument using erroneously limiting subsets of the actual metes and bounds of the claims is not sufficient to limit the claims to statutory matter because the "claims must be given their broadest reasonable interpretation." See, MPEP 2111 (emphasis added.)

Applicant based his argument on narrower subsets of what is actually claimed, thereby presenting erroneously narrow claim interpretations that appear more acceptable than the ones actually drafted into the claims.

Applicant must expressly present limitations that, in their broadest reasonable interpretation, denote statutory limitations to a practical application.

Examiner cannot even rely on In re Festo's "argument-based estoppel" to limit the claims to the matter in Applicant's argument, since such doctrine of equivalents issues are actually decided later in Court after an application has been allowed and later contested. Accordingly, Applicant's arguments cannot, at this early stage, be presumed by Examiner to be so limiting.

Examiner reads the claims carefully to search for actual limitations to practical applications and finds none. It is Examiner's opinion that the claims are devoid of statutory material. Having been given ample opportunity to respond by amendment,

Applicant has presented no other statutory limitations to circumscribe the metes and bounds of the claims sufficiently to change this assessment.

Accordingly, Applicant has failed to carry his burden of showing how the claims are in any way statutory. On this basis, Examiner finds Applicant's argument to be unpersuasive and the rejections STAND.

102/103 Arguments

Applicant uses inconsistent terminology and seems to be confused by the inconsistencies in his own terminology. Examiner gave §112 rejections in order to give Applicant an opportunity to straighten things out. Applicant has not availed himself of this opportunity and made arguments that depend on these inconsistencies in order to avoid the prior art asserted by Examiner.

Before addressing the individual arguments, Examiner will address these inconsistencies and will provide the interpretations used to make the rejections.

The first issue is the definition of "metafeatures".

Metafeatures

The prefix "meta" has a standard meaning in the art.

The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition defines the prefix "meta" the following ways:

> meta
> (1) A word denoting a description that is one level of abstraction above the entity being described.
>
> (2) A Greek prefix meaning that which pertains to the whole or overall entity or that which is in common or shared with all member entities comprising the whole.

This is a mouthful, but one can more easily see what it means by looking at how it is actually used to create other words. Here are some examples:

The Authoritative Dictionary of IEEE Standards Terms, Seventh Edition defines "metadata" as follows:

> metadata
> ***
> (4) Data that describes other data.

Other dictionaries describe it similarly. The International Dictionary of Artificial Intelligence defines "metadata" as follows:

> metadata
> Data about data. Used in Data Mining and data warehousing to refer to data about the meaning and range of attributes, their relationships and locations. Metadata supplies the context to understanding raw data.

The International Dictionary of Artificial Intelligence defines "metarules" as follows:

> meta-rule
> A rule about the properties and roles of other rules.

That same dictionary defines "Meta-Knowledge" as follows:

> Meta-Knowledge
> A term to signify "knowledge about knowledge," where a program not only "knows" something (i.e., has access to a database of knowledge), but "knows what it knows."

The bottom line is that the ancient Greek prefix "meta" means "kind about kind". "Metarules" are rules about rules; "metadata" are data about data; "metareasoning" is reasoning about reasoning.

It is from this perspective that Examiner interprets Applicant's term "metafeatures" to mean:

> "Features about features."

It is also for this reason that Examiner selected Genetic Algorithm prior art. The "chromosomes" of Genetic Algorithms store a vector of "features." That's why the space spanned by the chromosome vector is commonly called the "feature space." Therefore, it is clear that features defining the feature chromosome is a set of "metafeatures," as Applicant claimed in claim 1.

Now, Applicant seems to follow this convention in claim 1, but departs from it in claim 5 where he claims that the "...domain data set is represented using a set of metafeatures." This can only be true if Applicant's "domain data set" is a set of "features." This is why Examiner applied the §103 art he used. Applicant noted this distinction in his argument, but did not realize that the inconsistency did not originate with the rejection...it is Applicant's usage of terms that conflicts with convention and causes the inconsistency. This is another reason why Examiner applied the §112 rejection...Applicant's use of terms is inconsistent.

Now, since Applicant is free to be his own lexicographer, Examiner applied art to follow the inconsistent application of terms in his application and argument. It is unknown to Examiner which interpretation will be used under the "Doctrine of Equivalents"...since In re Festo issues are decided by the Courts. Therefore, Examiner presented §103 art so that if Applicant's arguments are followed, §103 art will cover it. If the standard meanings of terms are followed, the §102 art will cover it.

Further analysis of these issues will be reserved until the specific arguments are addressed in turn. Examiner simply wishes to clarify the terminology at this point.

Domains

There are two possible meanings of the term "domain" recited in the IEEE Dictionary. Applicant recites them on page 6 of his brief thusly:

(A) the set of all possible values that can be taken on by an independent variable.

(B) In a relational model, the set of all possible values that can be taken on by some attribute.

Further, Applicant recites the IEEE definition of a "data set" as "a named collection of related records."

Applicant then makes the statement that "the features of the indexing terms taught by Lewis are not domain data sets."

Again, this problem is a result of Applicant's confusion regarding features" and "metafeatures."

Lewis contains metafeatures that are features of "indexing terms", but the indexing terms are features of the data set classified by Lewis. Regardless of how applicant interprets his claims, this prior art was selected to anticipate it. Here's how: If Applicant uses the standard understanding of "metafeature", the prior art shows this where it uses the metafeatures of the data classified by Lewis. If Applicant interprets "metafeature" in his claims as he does in claim 5 of his application(i.e., interpreting a "metafeature" as a thing that represents a domain data set...that is, the "metafeature" is a mere "feature") then it is anticipated by Lewis where it shows that the "metafeature" is a "feature" of the

indexing terms. Regardless of the level of abstraction Applicant chooses, the prior art was selected to anticipate it.

The reason Examiner chose to argue this way is that In re Festo might cause Applicant to be stuck with a meaning that is inconsistent with the common meanings of the terms...Examiner doesn't know at this point. So it was necessary to argue in the alternative to make the record clear in any eventuality.

It is Examiner's belief that Applicant's refusal to adhere to §101/§112 doctrine helped to create the interpretational problems because claims that have clear, real world limitations to practical applications are easy to look at to see how many levels of abstraction one is away from the real world. It would be easy to tell if something is a feature of a real-world thing, or a metafeature describing the features of the real world thing.

Since Applicant declined to provide limitations to real world things in the claims, this task becomes difficult because everything in the claim is abstract from the real world and there is no real world reference point.

Examiner will now reserve the rest of any arguments for discussion later. Examiner merely wanted to make clear that Applicant refers to two different levels of abstraction to discuss "metafeatures" and "domains". Further, Examiner wanted to show that these

inconsistencies are understood by Examiner and the prior art was chosen to anticipate the application in any direction Applicant may argue.

Applicant's Argument 5

> Independent Claims 1, 8, 13, 16 and 21-23 Independent claims 1, 8, 13, 16, and 21-23 are rejected under 35 U.S.C. §102(b) as being anticipated by McAulay. Regarding claims 8, 21, and 23, the Examiner asserts that McAulay teaches selecting a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules (FIG. 1: lines 4-5 and 10-11).
>
> In the Office Action dated June 22, 2004, the Examiner acknowledged that McAulay does not disclose selecting at least one of said one or more data classification models based on a meta-feature that characterizes said domain data set (see, rejection of claim 1), but asserted that Lewis shows a classifier using meta-features. In the present Office Action, the Examiner rejects claim 1 under 35 U.S.C. §102(b) as being anticipated by McAulay, but fails to address the issue cited above, namely, that McAulay does not disclose selecting at least one of said one or more data classification models based on a meta-feature that characterizes said domain data set.

The bottom line here is that Applicant misuses the word "metafeatures" in claim 5 to represent a "domain data set." Unless the claimed "domain data set" is a set of features itself, Applicant's usage is a confusing misuse of the prefix "meta."

As explained before, a "metafeature" in its proper sense is a feature regarding other features...not just regarding some "data set." Applicant used the term as if he believes it is merely a "feature" because he uses it to represent a "domain data set" in claim 5. By definition, such a thing is merely a feature of the "domain data set," if that is what it represents. If it represented the **features** of the "domain data set," then it would be a "metafeature."

In short, either the "metafeatures" in claims 1 and 5 are the same or different, either way, Applicant has made an error.

A) If the "metafeatures" are the same, then claim 5 is not further limiting of claim 1. Further, if they are both interpreted in the classical sense, since Applicant did not provide an alternative definition of "metafeature" in an effort to be his own lexicographer, then the primary art already anticipates both uses under §102 and the §103 is unnecessary. Further, if Applicant had defined "metafeature" differently from the standard uses of the words "meta" and "feature", then the §103 done for claim 5 could be rewritten to cover claim 1.

B) If the "metafeatures" are different, in order to further limit the claim to an Applicant-defined version of "metafeature", then Applicant's argument is mooted. Prior art for claim 1 would have to be augmented to capture the different interpretation in claim 5.

Any way Applicant argues, the prior art was selected to anticipate it.

Now, Applicant's argument begs the question of whether it triggers argument-based estoppel of In re Festo. Since such determinations are made later by the courts, it is unknown to Examiner which interpretation will be followed by the Court. Examiner endeavored to make the factual issues clear in any decision the Court might make regarding the interpretation of "metafeature" that Applicant has to live with in the end.

Applicant's Argument 6

In the Office Action dated May 19, 2005, the Examiner asserts that Applicant has not provided a limitation to the word "domain" and has not shown why unspecified "data sets" cannot include features of indexing terms..

First, Appellants note that Lewis was not cited in the current rejection of claim 1. Appellants also note that the present disclosure teaches that the domain dataset 300 contains a record for each object and indicates the class associated with each object. The domain dataset 300 maintains a plurality of records, such as records 305 through 320, each associated with a different object. For each object, the domain dataset 300 indicates a number of features infields 350 through 365, describing each object in the dataset. The last field 370 corresponds to the class assigned to each object. For example, if the domain dataset 300 were to correspond to astronomical images to be classified as either stars or galaxies, then each record 305-320 would correspond to a different object in the image, and each field 350-365 would correspond to a different feature such as the amount of luminosity, shape or size. The class field 370 would be populated with the label of "star" or "galaxy." (Page 8, lines 1-10; emphasis added.) The IEEE Standard Dictionary of Electrical and Electronics Terms, Sixth Edition, defines a data set as "a named collection of related records," and defines "domain" as "(A) the set of all possible values that can be taken on by an independent variable. (B) In a relational data model, the set of all possible values that can be taken on by some attribute." Thus, a person of ordinary skill in the art would recognize that the features of indexing terms taught by Lewis are not domain data sets. Also, since neither McAulay nor Lewis disclose or suggest that features of indexing terms are domain datasets, a person of ordinary skill in the art would not look to combine McAulay and Lewis.

Also, as previously argued, Appellants note that Lewis teaches that "most current indexing languages represent documents as tuples or vectors of numeric or binary values, with each value corresponding to an indexing term." (Page 38, Section 2.) Lewis then teaches that, "for clarity, we therefore call the features of indexing terms metafeatures." (Page 38, Section 2.2). Metafeatures in Lewis are therefore features of indexing terms (the individual values representing a document) and not domain datasets.

More importantly, Lewis does not disclose selecting data classification models based on a meta-feature feature that characterizes a domain data set. In addition, since Lewis only discloses the use of one algorithm (the genetic algorithm), there is no selection of classification models. Independent claims 1, 16, and 22 require classifying objects in a domain dataset using one or more data classification models, each of said one or more data classification models having a bias; selecting at least one of said one or more data classification models based on a meta-feature that characterizes said domain data set; evaluating the performance of said classifying step; and modifying said bias based on said performance evaluation. Independent claim 13 requires applying an adaptive learning algorithm to said domain dataset to select a data classification model based on a meta-feature that characterizes said domain data set, said data classification model having a bias; classifying objects in said domain dataset using said selected data classification model; evaluating the performance of said classifying step; maintaining an indication of said performance of said model for said domain dataset;

repeating said applying, classifying and evaluating steps for a plurality of said domain datasets; and processing said performance values for each combination of said domain datasets and said bias to adjust one or more rules for subsequent data classification, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models. Independent claim 8, 21, and 23 require classifying objects in a plurality of domain datasets using one of a number of data classification models, each of said data classification models having a corresponding bias; evaluating the performance of each of said domain dataset classifications; maintaining a performance value for each combination of said domain datasets and said bias; processing said performance values for each combination of said domain datasets and said bias to generate one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models; and selecting a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules.

Thus, McAulay et al. or Lewis, alone or in combination, do not disclose or suggest classifying objects in a domain dataset using one or more data classification models, each of said one or more data classification models having a bias; selecting at least one of said one or more data classification models based on a meta-feature that characterizes said domain data set; evaluating the performance of said classifying step; and modifying said bias based on said performance evaluation, as required by independent claims 1, 16, and 22, do not disclose o- suggest applying an adaptive learning algorithm to said domain dataset to select a data classification model based on a meta-feature that characterizes said domain data set, said data classification model having a bias; classifying objects in said domain dataset using said selected data classification model; evaluating the performance of said classifying step; maintaining an indication of said performance of said model for said domain dataset; repeating said applying, classifying and evaluating steps for a plurality of said domain datasets; and processing said performance values for each combination of said domain datasets and said bias to adjust one or more rules for subsequent data classification, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models, as required by independent claim 13, and do not disclose or suggest classifying objects in a plurality of domain datasets using one of a number of data classification models, each of said data classification models having a corresponding bias; evaluating the performance of each of said domain dataset classifications; maintaining a performance value for each combination of said domain datasets and said bias; processing said performance values for each combination of said domain datasets and said bias to generate one or more rules, each of said rules specifying one or more characteristics of said domain datasets and at corresponding bias that should be utilized in one of said data classification models; and selecting a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules, as required by independent claims 8, 21, and 23.

First, the claims are not written in "means-plus-function" format (or "step-for" format) so the limitations of the Specification cannot be read into the claim, as Applicant suggests. Further, the parts of this argument discussing whether the term "metafeatures" is anticipated has already been discussed in the response to the previous argument. Applicant's erroneous/unconventional uses of the words "meta" and "feature" were discussed as well as how the prior art anticipates any interpretation Applicant argues. The In re Festo implications of Applicant's arguments were discussed as well.

Further, Applicant presents two paragraph long sentences that make general denials of the rejections without referring to the specific rejections made by Examiner. Such "arguments" are insufficient to show distinctions from the specific prior art anticipations presented by Examiner. Applicant has not made any argument other than the general denials presented in these sentence/paragraphs.

A mere expression of disagreement is not a legal argument.

Applicant has not presented matter of sufficient clarity and accuracy upon which Examiner can base proper reasons for allowance. The rejections stand.

Applicant's Argument 7

> In the Office Action dated May 19, 2005, the Examiner asserts that Applicant's argument is a run-on conclusory statement that does not specify any feature that is claimed by Applicant that does not appear in the prior art, and that it is a stringing together of the features of several claims.
>
> Contrary to the Examiner's assertion, the above citation recites, for each claim, the one or more limitations that are not disclosed or suggested by the prior art. The assertion that the citation is "a stringing together of the features of several claims" unfairly suggests that

limitations from different claims were strung together to represent one claim.

A mere expression of disagreement is not a legal argument.

Applicant presented a general denial of the rejections, as he did in Argument 6 above. A "general denial" is a type of conclusory statement that does not constitute legal argument. The prior art and the claims are not specifically compared to determine what is novel over the prior art.

The repeated recital of the claims does not make them any more allowable. Examiner pointed out with particularity what was anticipated and why. Further, if Examiner were to write reasons for allowance, he would write it to the same level of detail. Applicant presents nothing that would serve as a good reason for allowance over the prior art of record.

Applicant has not carried his burden to show that the claimed invention is novel and non-obvious over the prior art. The rejections stand.

Applicant's Argument 8

Claims 3 and 18

Claims 3 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over McAulay et al. in view of Lewis. The Examiner asserts that the limitation of claim 3 is taught by McAulay (FIG. 1: lines 4-5) and, in Argument 6, asserts that rules are generated in the system (top of the second column on page 1393) and that a bias is inherent to a classification system. Appellants note, however, that McAulay does not disclose or suggest generating one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models.

Thus, McAulay et al. or Lewis, alone or in combination, do not disclose or suggest generating one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a

> corresponding bias that should be utilized in one of said data classification models, as required by dependent claims 3 and 18.

Applicant asserts that McAulay et al. does not "disclose or suggest generating one or more rules, each of said rules specifying one or more characteristics of said domain datasets and a corresponding bias that should be utilized in one of said data classification models, as required by dependent claims 3 and 18."

Examiner directs Applicant's attention to the actual title of the McAulay et al. reference:

"Improved Learning in Genetic Rule-Based Classifier Systems"

Please note that the title says the prior art is a rule-based classifier system.
Note further, it learns genetically because it is learning (creating) classification rules.

Regarding the Lewis art, Examiner directs Applicant's attention to section 2.3 for the clearest and most concise exposition of these principles. Specifically, that section is entitled:

"Text Categorization"

> "The second approach is to induce the categorization system automatically from manually labeled training data."

Note that the training data is labeled, but the classes and rules are not. Induction is used to induce them. So, here too the secondary art learns a rule based classifier system.

Applicant's argument does not carry its burden and the rejection stands.

Applicant's Argument 9

> Claims 4 and 19
>
> Claims 4 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over McAulay et al. in view of Lewis. The Examiner asserts that the limitation of claim 4 is taught by McAulay (Page 1393, third paragraph, first three lines of the paragraph). In Argument 7, the Examiner again asserts that rules are generated in the system and that "the prior art is Genetic ...that is, natural Selection." Applicants note, however, that McAulay does not disclose or suggest the step of selecting a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules.
>
> Thus, McAulay et al. or Lewis, alone or in combination, do not disclose or suggest the step of selecting a data classification model for classifying a domain dataset by comparing characteristics of said domain dataset to said rules, as required by dependent claims 4 and 19.

Again, Applicant merely makes a denial of the rejection and does not explain how the prior art is distinguishable from his claimed invention. The features Applicant mentions in his argument are shown in McAulay et al., page 1394, part "B" where it recites:

> "A classifier system has multiple classifiers which are the current rules of the system."

Further, that section recites:

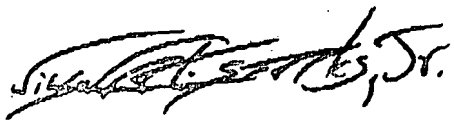
> "The critic component gives a performance measurement of the response of the current system. Using this measurement, the classifier system activates a credit assignment algorithm and then genetic algorithms to discover new rules."

Further, the entire genetic algorithm process is shown in Figure 1. There, it is evident that structures (i.e., rules) are selected according to how well they classify the domain data set (training data.) Applicant's argument is unpersuasive and the rejections stand.

For the above reasons, it is believed that the rejections should be sustained.

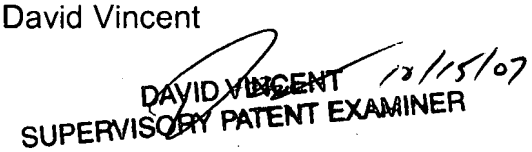
Respectfully submitted,

Wilbert L. Starks, Jr.



Conferee:

Mr. David Vincent



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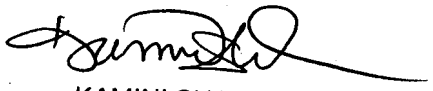

KAMINI SHAH
SUPERVISORY PATENT EXAMINER

Kamini Shah